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ABSTRACT

Alternative financing methods (other than state financing) for developing cost-effective energy efficiency projects are discussed. It is suggested that by properly financing energy efficiency investments, state campuses can generate immediate positive cash savings. The following eight initiatives for maximizing energy savings potential are addressed: assess the energy savings potential in all public buildings; commit to funding all projects that are cost effective; propose energy efficiency projects separately for capital budgeting; lift the capital ceiling on energy projects by demonstrating access to external capital; confirm or authorize the contractual ability of state institutions to use alternative financing; develop procurement procedures for using alternative financing; designate a budget line for alternative finance payments; and create a new energy budgeting system to stimulate efficiency. Components of an energy budgeting system are as follows: budgeting in energy units, budgeting over a 5-year period; calculating energy savings and converting into cost savings, and developing a schedule for distribution of savings. Finally, the following financial options are discussed: tax-exempt bonds, municipal leasing, shared savings contracting, and third-party financing. (SW)

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State Policy Initiatives for Financing Energy Efficiency in Public Buildings

by the ENERGY TASK FORCE

An energy efficient physical plant is a resource that should be developed as part of sound fiscal management. Our buildings and equipment were constructed without regard for energy operating costs. As a result, there exist tremendous opportunities for energy cost control through improved building operations and maintenance and capital investments in energy efficiency. State-owned buildings are major energy consumers, and energy is a significant budget line-item for state institutions and agencies.

This article is one of eight papers in the Energy Task Force series on "Financing Campus Energy Conservation Projects." "Financial Planning for Energy Efficiency Investments" was published in the March Business Officer. "Shared Savings Financing of College and University Energy Efficiency Projects" will be published in a future issue.

To obtain a list of all the papers available and to receive additional information on the project, write to the Energy Task Force, 11 Dupont Circle, Suite 250, Washington, D.C. 20036. The task force is composed of NACUBO, the Association of Physical Plant Administrators of Universities and Colleges, and the American Council on Education.

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Yet, while faced with excellent investment opportunities in energy efficiency improvements, states are experiencing severe fiscal crises; the resources available for financing energy efficiency are limited. Given the power of new alternative financing options, however, public administrators can begin to view energy efficiency improvements as investments with attractive returns. This article will demonstrate that lack of state resources need no longer be a barrier to developing cost-effective energy efficiency projects. Alternative financing can be arranged for all projects.

Alternative Financing

The main principle of energy financing is straightforward: energy conservation saves money, and the savings can be used to pay for the improvements. By properly financing energy efficiency investments, state campuses can generate immediate positive cash savings. In other words, economically sound projects can be self-financing.

The rationale for exploring alternative financing is equally straightforward: in the competition for limited resources many cost-effective projects are not being funded. In light of the availability of alternative financing options, energy efficiency offers compelling opportunities for cost reduction that no astute manager can afford to overlook.

While recognizing that they are in a constrained position in terms of capital, public institutions can still take an aggressive approach to developing their energy cost savings po-

tential by using alternative financing. Delaying projects means losing the potential cost savings they offer. Delay can also inflate project costs.

Alternative financing offers a way to implement projects expeditiously. In the final section of this article, several financing options are discussed:

- Tax-exempt bonds,
- Municipal leasing,
- Shared savings contracting, and
- Third-party project financing.

Alternative Financing with Private Capital. Using private capital for energy efficiency projects can:

- Relieve the burden of funding from state and local budgets,
- Generate an immediate positive cash flow to the state,
- Free scarce state resources and preserve borrowing capacity for other purposes,
- Expedite acquisition of energy saving equipment and thereby avoid losing potential energy savings,
- Make use of the energy management and project development expertise of the private sector, and
- Transfer the risks associated with energy project development and operations to the private sector.

Why Be Concerned with Energy Efficiency?

Nationwide, higher education spent an estimated \$3.2 billion on energy in FY 1981/82. This amount is equiva-

lent to the salaries of 129,000 full-time faculty, \$363 for every full-time student, or one and one-half times the budget of college libraries nationally. The estimated energy expenditure for public schools (K-12) is \$4.5 billion; for hospitals, over \$3.4 billion (\$2,517 per bed per year). High energy costs have taken their toll on municipal budgets. A 1980 survey of 1,550 local governments by the International City Management Association revealed that energy expenditures were the second highest line-item in the annual operating budgets of 56 percent of the local governments surveyed.

A dollar spent on energy is one less dollar available for valuable programs and services. A clear, direct equation between energy and cost control needs to be made in the minds of public administrators.

These energy costs will continue to rise, especially in the wake of natural gas deregulation. For example, two-thirds of the nation's hospitals use natural gas as their primary fuel. Assuming natural gas prices will double by 1986, \$900 million will be added to hospital fuel bills. Even though the price of oil has fallen recently from approximately \$34 per barrel to \$28, the economic potential in improved energy efficiency is still very great (as recently as 1979 oil prices were \$14 per barrel; in 1972 they were \$1.50 per barrel). The relative efficiency of our energy systems has not yet caught up with the price increases of the 1970s. Energy efficiency still represents a major opportunity for cost control in the public sector.

Another area of concern related to energy efficiency is facilities renewal. Major investments will be required in the coming decades for renovating and upgrading aging capital facilities. Energy efficiency improvements can be the foundation of a capital renewal program, and energy cost savings can significantly offset the costs of deferred maintenance expenditures.

Energy efficiency offers numerous other public economic benefits: jobs in the conservation industry, reduced loss of purchasing power from the local economy to pay for energy imports, the healthy multiplier effects of increasing the local circulation of goods and services, and lower costs for public services.

Charge to State Legislatures And Executive Agencies

State legislatures and executive agencies need to develop procedures for financing all cost-effective energy efficiency projects in buildings that the state owns and operates and for which it pays the energy bills directly. There is immediate cost-control potential here. Secondly, state government needs to concern itself with cost control and facilities renewal in institutions for which it has indirect fiscal or public responsibility: schools, hospitals, colleges and universities, and municipal facilities.

The Department of Energy's Institutional Conservation Program, popularly known as the Schools and Hospitals Grants Program, is searching for policy initiatives that will promote the financing of energy conservation, work with the private sector and market forces, and require a minimal budget commitment for the federal treasury. Whatever funding level is achieved for future grant cycles, it will be grossly inadequate to finance all the cost-effective energy projects that are being identified within these sectors. This change in federal support is shifting responsibility for energy financing to state and local initiatives, making it necessary for states to develop all cost-effective energy efficiency projects.

Initiatives for Maximizing Energy Savings Potential

Several policy and program initiatives are necessary for maximum development of energy efficiency potential:

Initiative 1—Assess the energy savings potential in all public buildings.

Initiative 2—Commit to funding all projects that are cost effective.

Initiative 3—Propose energy efficiency projects separately for capital budgeting.

Initiative 4—Lift the capital ceiling on energy projects by demonstrating access to external capital.

Initiative 5—Confirm or authorize the contractual ability of state institutions to use alternative financing.

Initiative 6—Develop procure-

ment procedures for using alternative financing.

Initiative 7—Designate a budget line for alternative finance payments.

Initiative 8—Create a new energy budgeting system to stimulate efficiency.

Initiative 1. Assess the energy savings potential in all public buildings. It is critical that public agencies continue to collect energy data on their buildings and to identify efficiency projects. This is the initial phase of project development that only the building owner/manager can undertake. Accurate data are needed to determine which projects have priority, to attract private financing, to negotiate sound contracts, and to monitor results independently. Funding for audits and engineering feasibility studies should continue aggressively.

One possible source of funds for energy audits or even minor improvements is reserve repair and replacement funds established by bond indentures for buildings originally funded by bonds. Federal "oil overcharge" funds could also be used for this purpose.

State energy offices (SEOs) should continue to assemble information on potential energy efficiency projects as they have under the Federal Schools and Hospitals Program. Then, alternative financing can be arranged.

Initiative 2. Commit to funding all cost-effective energy projects. States should commit to funding and developing all the energy efficiency projects that are cost-effective. The criteria for cost effectiveness are:

1. The project meets the state's target rate of return.

2. The project can be financed on a positive cash-flow basis.

This policy should be communicated clearly to all institutional plant managers. The policy should indicate to building and finance managers that energy projects meeting the specified economic criteria are fundable or, additionally, that energy finance and service contracts with private firms that meet specified criteria are acceptable.

Initiative 3. Propose energy projects separately for capital budgeting. Be-

cause of their cost-saving nature, energy efficiency improvements should be presented separately for capital budgeting. This will encourage physical plant managers to bring energy investments up the line. Further, it will allow the financial returns of the projects to be highlighted and alternative funding sources to be explored even if regular capital appropriations are not forthcoming.

Initiative 4. *Lift the capital ceiling for energy projects by demonstrating access to capital.* Many states, through the capital budgeting process, impose a ceiling on allowed annual capital expenditures. Because energy projects compete directly for funds with projects vitally related to campus mission, they are often cut to meet the ceiling and preserve the other priorities. Even when cost-effective energy projects have been identified and engineered, they are not always submitted for appropriations.

Access to external capital to implement campus energy projects can easily be demonstrated. Funding for energy projects does not have to compete for internal resources.

Initiative 5. *Confirm or clearly authorize the contractual ability of state institutions to use alternative financing.* Public institutions must live within strict constitutional debt limitations and cannot incur multi-year liabilities, except bonded indebtedness. This restriction may place limits on their ability to use private financing mechanisms. For example, in Massachusetts public institutions can lease only certain property—e.g., buses, computers—and are not currently authorized to lease energy equipment. In New York legislation has been introduced to allow only up to 10-year energy service contracts.

These restrictions can be dealt with contractually with a "nonappropriations" or "fiscal funding-out" clause (discussed below).

Several other legal issues can arise if a state institution proceeds to enter alternative financing contracts concerning procurement procedures, labor relations, leasing of state property to developers, and financing. To encourage use of alternative financing, legislation clearly authorizing it is helpful (an excellent example of such legislation is California Senate Bill 701 passed in 1982).

In many cases, procurement law will have to be changed. Each state has its own laws that act as barriers to the procurement of energy project financing from private sources. Identifying legal barriers and revising the laws to permit private financing will necessarily be a state-by-state process.

Initiative 6. *Develop procurement procedures for alternative financing.* State governments should develop procedures for utilizing private capital financing of energy efficiency improvements. There may be economies in centralizing financing expertise in one state office (such as energy purchasing, general services, or public works) and then making it available to other state agencies and public-purpose institutions.

After researching and qualifying financing mechanisms and specific plans offered by private business, the energy financing office could serve to connect those institutions needing financing with firms that can provide it. By assembling cost-effective energy projects the SEO could attract investor interest in this market. The office's goal would be to provide information that would open up the marketplace and help both public institutions and private businesses to engage in mutually beneficial transactions.

In order to make use of private capital, public agencies must continue to identify energy projects and develop procedures and standards for procuring financing. Several states, notably New Jersey, Washington, Minnesota, California, Delaware, New York, and Pennsylvania, have developed or are developing procurement guidelines for alternative energy conservation financing and services. The New York State Energy Research and Development Authority is currently involved in a demonstration program to broker energy performance contracts for several institutions, including a state-owned psychiatric hospital and two public schools.

Initiative 7. *Designate a budget line for making alternative finance payments.* To use alternative financing, the budget line-item out of which the financing payments will be made must be determined. If an institution has identified an energy conservation measure that will repay its initial

costs in one year or less, it should be allowed the budget flexibility to spend or transfer funds out of its utility/fuel account to implement this measure. The state of Washington has recently passed legislation to allow this practice. Many state institutions forbid the practice and thus unnecessarily prevent expeditious implementation of conservation measures.

Massachusetts has considered allowing funds to be spent from the fuel account budget line for lease, debt service, and other forms of energy efficiency financing payments if the transaction creates a positive cash flow, that is, where payments are less than energy savings. This policy would encourage use of innovative financing programs and give institutional managers the budget flexibility to initiate such transactions.

Initiative 8. *Create a new energy budgeting system for stimulating efficiency.* Individual public institutions typically do not have incentives to save energy because all savings revert to the state's general coffers. Few, if any, dollars are returned to the institution that generated the savings.

If future energy budgets are based on historic energy expenditures, the agency may have a disincentive to conserve. One manager, in anticipation of a governor's mandate to cut utility costs by a fixed percentage of existing expenditures, deliberately refrained from implementing all energy conservation measures in order to protect future budget allocations. Administrators knew that utility bills would be paid whatever their amount. The state legislature had granted supplemental appropriations for energy cost overruns in the past, a widespread practice. The institution, therefore, had no incentive to submit all identified energy projects in the capital request because, if funded, the projects would effectively reduce the capital appropriation for other purposes and would reduce the energy operating budget in future fiscal periods. Not only do institutions lack incentive, but, more importantly, they often lack the resources necessary for effective energy management.

The solution is to create an energy budgeting system to stimulate effi-

ciency. The new system has two purposes. First, energy efficiency and management successes should be rewarded. The system should focus incentives to conserve energy on the end user and other energy managers by allowing them to retain part of their energy savings.

Second, the system should provide resources for energy management. A portion of avoided energy costs can be systematically garnered for reinvestment in the efficiency program. This system creates stable parameters for effective management and in the process institutes a performance monitoring system.

A small percentage of avoided energy costs is being distributed back to the individual campus administrations within the State University of New York system. California, Utah, and North Dakota are also investigating such a policy. A Colorado program allows local campuses to retain all energy cost savings beyond 12.5 percent of the total energy budget and also penalizes the campus for exceeding its allocation by more than 12.5 percent.

Components of an Energy Budgeting System

Three important issues have to be addressed in designing the new energy budgeting system:

- How far into the future should energy cost savings be calculated?
- How should energy budgets for subsequent years be calculated?
- What stipulations should be placed on the use of saved energy dollars?

Budget in Energy Units. Distinguishing between energy units and dollars is the key to this budgeting system. A base-year energy consumption level, expressed in energy units, is established (the previous year's consumption corrected for weather could be used). This amount becomes the energy budget for the next year.

Budget Over a Five-Year Period. In order to provide continuity for the budgeting system and create stable parameters for planning, a five-year budget is created. This long time-horizon is critical to the success of the program.

Base-year consumption is the energy budget for year 1 of the plan.

Subsequent budgets can have the exact same base corrected for changes in the amount of total space served and in building operating patterns, or they can decline as progress is made toward an efficiency target. If the latter method is chosen, a five-year efficiency target from operations and maintenance (O&M) improvements should be set. The institution then establishes energy consumption and efficiency targets for each of the next five years. If new experience and conditions warrant, the target can be changed. Changes should reflect improved accuracy in estimating energy use and should not compromise the goal of creating incentives for efficiency. At the end of the five-year period, a new base-year should be established.

Calculate Energy Savings and Convert into Cost Savings. The difference between the amount of energy budgeted and the amount actually consumed is the savings. The savings will be broken down into savings from (1) capital projects and (2) O&M improvements. The calculation of energy saved should correct for weather, changes in operating hours, and increased space.

Either the actual prevailing prices or the estimated price on which the dollar budget was based can be used to calculate the dollar savings. If prices rise unexpectedly, there may be no excess dollars in the energy budget for distribution. Still, institutions may want to calculate and distribute energy savings at the prevailing prices. Energy savings have become more valuable, increasing the importance of conservation. On the other hand, energy prices that are higher than estimated may consume all funds available for distribution, making it impossible to stay with the budgeting system. How that system will respond in such cases is a question that must be addressed.

Again, the goal of this system is to create incentives for reduction in consumption. The institution or energy manager should not bear the risk of, or benefit solely from, unanticipated changes in energy prices. For example, if no improvement in efficiency occurs, yet prices fall, a budget excess is not attributable to energy management and should not be distributed under the program.

Develop a Schedule for Distribution of Savings. Once the value of savings is determined, the funds can be distributed. A schedule for savings distribution should be negotiated. Funds can go to three groups:

Building/agency energy users. A small portion of avoided costs can be distributed to the end-user or for support of the institution's academic mission. (This should be very visible to maximize the public relations value of the money.) Recipients here should share only in savings attributable to O&M improvements.

Energy project fund. Funds can be used for energy engineering studies and consulting services or for financing payments, or can be applied to the direct costs of efficiency projects and other expenses related to the energy management program, e.g., submeters. Savings from both capital and O&M projects should be distributed to such a fund.

General state fund. A declining energy budget can represent all or part of the general fund's portion of O&M energy savings. Of course, no stipulations are put on savings reverting to the general fund. All savings from capital projects could revert to the general fund five years after implementation of the projects.

Tax-Exempt Bonds

The term "alternative financing for energy projects" refers to any source or method of financing (including tax-exempt bonds) other than state appropriations made through the normal capital budgeting procedure. The reason for defining them as alternative is that bond financing of energy projects, though it is a traditional method of funding, does not have to cost the state government any money. Given an economically sound project, the annual debt service on the bonds will be less than the energy cost savings, resulting in immediate cash-flow improvement. It is critical that this investment perspective and positive cash-flow approach be adopted.

Tax-exempt bonds are the traditional method for public institutions to finance capital projects. The two types of government bonds are (1) general obligations (GO) bonds and (2) revenue bonds. Because GO

bonds are an established method for financing capital facilities, they are the first option to be examined for funding public sector energy efficiency improvements.

The critical elements in bond financing of energy projects are how the bonds are secured and what their source of repayment will be. The flow of funds, tracing the saved energy dollars to the debt service payments, should be mapped out clearly. A direct connection needs to be made between the savings and the bond payments. No agency or institution should be penalized for implementing energy projects. That is, if an institution is required to make the debt service payments, it should also be allocated a portion of the savings.

Debt-issuing capacity is a limited resource. Some states or public institutions may be near their prudent debt-carrying capacity. Although bond financing of energy projects will cause immediate net savings, it will lower debt service ratios. State officials must make a policy decision on whether to use borrowing capacity for energy projects or to conserve it for other purposes. The attractiveness of other financing options that have a lesser impact on borrowing capacity will be a factor in this decision.

States have operated grant and loan programs for public sector energy projects financed with GO bonds. The federal Schools and Hospitals Grants Program remains an excellent model for grants programs operated at the state level. This program could be assumed and expanded by state governments using state GO bond financing.

New Jersey issued \$50 million in GO bonds in November 1980 to finance energy improvements in the 40 million square feet of state-owned buildings. California has issued GO bonds to provide matching funds for federal grants under the Schools and Hospitals Grants Program. Massachusetts is considering an innovative program for financing energy efficiency projects for state and municipal facilities with GO bonds. The original bond principal would establish a revolving loan fund. Individual loan terms would be arranged so that debt service payments would be less than annual energy savings. Debt service would be deposited back into the loan fund for reinvestment in ad-

ditional projects. Originally, \$45 million was proposed to initiate the program; this amount has been reduced to \$10 million in a bill now before the state legislature.

Nebraska has committed \$5 million per year for the next five years for an energy conservation grants program for public schools. The state grant covers 75 percent of the project costs (a 25 percent matching local contribution is required). The funding derives from oil and gas severance taxes, which, of course, all states do not enjoy.

Herricks School District, Long Island, New York, and Jefferson County, Colorado, recently gained voter approval for bond issues solely to finance energy conservation projects. These issues were presented to the voters in terms of the total tax dollars that the school districts would save by implementing the energy projects. The debt service on the bonds was designed to be less than the energy savings, thus generating a positive cash flow from the project. Voters apparently understood this logic.

Revenue Bonds. Revenue bonds are typically secured by revenues from the project that is being financed. The cash flow from operation of the project serves as security and the source of bond debt service. Because energy efficiency projects save costs rather than generate revenues, they are not eligible for strictly self-supported project financing. There is one important exception to this rule: if the project generates power (electricity or steam) for sale, those revenues could be used as security. Also, a private business entity could intervene between the bond authority and the public institution. Using the bond proceeds, the private firm would make energy efficiency improvements under one of several contractual arrangements. The payments from the institution to the private firm would serve as the revenue stream to secure the bonds. The advantage of a pure project revenue financing is that it is "off credit" for the institution—i.e., the institution's capacity to borrow for other purposes is not diminished by the transaction.

States can utilize revenue bond authorities for financing public sector energy projects through third-party

financing. The issuing authorities have no taxing power. Bonds issued by these authorities are not a debt of the state or local government that established them. No government obligation is created by these bond issues. These authorities are an ideal and identifiable vehicle for energy project financing.

Municipal Leasing

A municipal lease is a conditional finance or purchase agreement, structured like a simple loan, with the interest income being tax-exempt to the lessor. At the end of the lease term, ownership of the property passes to the lessee. Interest rates are very favorable (currently around 10 percent, just slightly above the municipal bond rate). With typical lease terms (5 years at 10 percent), all energy projects with a 3.5-year simple payback period can be implemented on an immediate positive cash-flow basis. If the lease term is extended, projects with longer paybacks can be implemented for positive cash flow.

A municipal lease does not constitute long-term debt of the lessee. It does not encumber the lessee's future budgets or reduce—to the degree that bonded indebtedness would—an institution's borrowing capacity. The lease includes a clause limiting to a single fiscal period the lessee's obligation to make the lease payments. The lessee is obligated to make every effort to secure appropriations for lease payments, but, by removing the fixed obligation to make payments in future fiscal periods, the restriction concerning creation of multiyear liabilities is satisfied.

Creating any state obligation raises the concern of overextending the state's credit. Municipal lease financing of energy projects addresses this concern in two ways. First, energy projects are particularly well-suited for municipal lease financing because they can be financed on a positive cash-flow basis. Lease payments can be structured to be less than debt service. This is a cost-cutting transaction. Second, the municipal lease satisfies all legal restrictions on incurring multiyear liabilities. Thus, a legislator or administrator should approve of municipal lease financing of energy projects when the

transaction can meet the positive cash-flow criterion.

To move forward on municipal lease financing, state officials must answer the following:

1. Is this a desirable method?
2. What are the state's procedures and laws for using municipal leasing?
3. What source or budget line for lease payments would be used? Could lease payments be made out of the utility line (given that energy cost savings are greater than debt service)? Would an established account line be used or would a new one be established?
4. What criteria and financial analysis procedures would be used for determining the projects to finance with municipal leasing?
5. What are current market rates and terms for leasing?

Shared Savings Financing for Energy Efficiency Investments

The three most common barriers to exploiting energy savings potential are (1) the lack of in-house expertise and administrative momentum needed to identify and implement projects, (2) the lack of up-front capital, and (3) the lack of guarantees to reassure public administrators that a project will actually produce the promised savings at a reasonable cost.

The potential dollar savings available from institutional energy conservation are so great that they have attracted the interest of private business, which, in turn, has begun to address and eliminate barriers to energy efficiency investment with what is known as "shared savings" contracting.

Shared savings is a generic term for an agreement in which a private company offers to execute energy efficiency capital improvements in exchange for a portion of the energy cost savings that accrue. Typically, a company enters into a long-term contract and, at its expense, designs, installs, and manages or co-manages an energy efficiency system for a building.

The most attractive feature of this arrangement is that no up-front costs are incurred. Capital is provided by the private firm. The cost of that

capital is spread out over the length of the contract through service payments that are made out of the energy savings generated by the project. Further, the private firm assumes many of the risks of the installation. The campus is required to pay only a percentage of what it saves. If no savings are realized, no payment is due.

Energy Service Contracts. An energy service company is a full-service company that contracts to provide given levels of heating, cooling, lighting, and equipment use. The company assumes all responsibility for the utility payments of the institution and makes its profit on the spread between its cost of providing energy services and its fees.

Fees are guaranteed to be a negotiated percentage of what the same level of energy services would have cost if the institution continued to operate at the same level of efficiency. In other words, a campus can never pay more for its energy than it presently pays, assuming price levels remain the same. The company makes capital improvements to provide energy services more efficiently, at no direct expense to the institution. The institution is responsible only for making the contract payments.

Shared Savings. Shared savings contracts function much the same as full-service contracts but are more common because their scope is less comprehensive, aiming at one project or one series of projects. They have most commonly been used for energy control systems. Other types of installations that can be financed by shared savings are heat recovery systems, boiler fuel conversions, and cogeneration. Whole packages of general energy systems improvements have been included under shared savings arrangements. This type of financing, while new, is gaining acceptance because of its inherent flexibility.

The share of savings required by the investor to make the investment economically attractive depends on the firm's cost of capital and other variables, and will vary from 50 to as high as 90 percent. It is important to remember that payments are based solely on savings realized. If no savings accrue, the energy user is not liable to make payments for capital im-

provements or services rendered. Thus the firm has every incentive to perform. Shared savings contracts are being written for terms of 5 to 12 years.

Third-Party Project Financing Of Central Plant Facilities

Many state institutions operate large central plants. On any campus the central plant is the first place to look for efficiency improvements. Major projects such as cogeneration or conversion to alternative fuels (e.g., biomass or waste) can offer tremendous savings in energy supply and fuel costs. These projects are excellent candidates for private capital financing.

Central plant projects are well-suited to third-party financing, a generic term for arrangements whereby a private, independent contractor will design, build, finance, and even own and operate the plant. The private party can lease the facility back to the state (as in state lease-purchase agreements for office buildings), or it can assume responsibility for plant operation and enter into long-term energy sales contracts for the sale of utilities. In the latter case, the real property on which the plant is located would be leased to the private party, which is typically organized as a limited partnership and utilizes debt leverage to maximize tax benefits to the investors.

The California Department of General Services recently contracted for third-party development of 10 cogeneration plants. Pennsylvania will soon be issuing a request for proposals for financing cogeneration in state facilities.

The University of Texas has used this method for financing the construction of conventional boiler plants. Dade County, Florida, is considering leasing a cogeneration plant in a similar arrangement. The county will operate the plant and sell electricity to the local utility. Thermal output will be used to power absorption chillers for cooling. The county estimates a first-year net profit of \$700,000 from electricity revenues and saved energy costs. After 10 years Dade County can purchase the plant for a nominal sum.

The Navy has engaged in third-

party financing of cogeneration facilities and soon will be issuing another RFP to acquire these services.

Utility participation. The state's role as public utility regulator is important in developing small power projects. Regulations requiring utilities to interconnect with small power producers and to purchase power from them at rates approaching a utility's "avoided cost" should be enforced at the state level to create a positive regulatory climate for such projects. Utilities can also play a major role in financing energy efficiency projects as an economic alternative to the construction of new generating capacity.

Conclusion

There are many options for financing cost-effective energy efficiency investments. Implementing these projects constitutes sound fiscal policy. For technical assistance in developing an energy financing program for a state or an institution, contact the Energy Task Force, telephone 202-234-1662.

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